

---

# Products

---

## Introduction

Fifteen products or product categories are discussed. These have been chosen to represent the products which provide the best opportunity for exporters from Commonwealth countries.








For each product the information provided falls into three categories:

Firstly, basic market information that is related to production, including recommended varieties, quality requirements, production locations and harvesting stages.

Secondly, post harvest information. This covers grading standards, packaging as well as post-harvest handling and storage techniques (EC grading and packing standards are set out in Appendices 1 and 2).

Thirdly, market information. This considers market size, import trends, monthly patterns and the seasonality of supplies from major sources. Broad C&F price indications are given for each product wherever possible. These have mostly been based on the VBA flower auction price in the Netherlands as it is the principal determinant of German wholesale prices. The figures must, however, be treated cautiously since price fluctuations between seasons, qualities, grades and varieties are very significant and prices may differ by 50% or more for the same product. Exporters must obtain more specific information from potential importers and from the information sources listed and ideally conduct extended test marketing before commencing large scale exports. Exports to two different markets will give the exporter improved and more reliable market information.

Throughout this handbook the following codes have been used to indicate the supply and demand relationship:

<b>Supply patterns:</b>	 peak supply	 restricted supply	 limited supply
<b>Market windows:</b> eg.			
	possible months to send		good months to send
	best months to send		

Under the sub-heading 'Successful Selling' the prospects and opportunities for exporters are summarised for each product and recommendations given on how to promote the product and develop sales.

---

## Roses

---



### Varieties:

Roses grown for export are specially bred greenhouse varieties. The assortment can be divided into four groups as below.

### Big Flowered Roses:

White: Athena  
Red: Obsession, Idol, Madame Delbard, Barcarole  
Yellow: Cocktail, Peer Gynt, Texas  
Pink: Sonia, Vivaldi  
Other: Jacaranda, Tineke, Osiana

### Medium Flowered Roses:

White: Jack Frost  
Red: Jaguar, Mercedes, Baronesse  
Yellow: Frisco, Golden Times  
Pink: Europa, Gerdo, Kiss  
Other: La Minuette

### Small Flowered Roses:

Red: Coronet  
Pink: Motrea (not suitable for tropical production), Carolien, Rosetta, Disco  
Orange/Yellow: Golden Belinda, Sabrina

### Spray Roses:

White: White Dream  
Red: Joy, Nikita  
Pink: Evelien, Pink Delight  
Other: Porcellina

The above varieties represent only a small number of those available and it is essential to discuss requirements with market contacts prior to planting.

# Roses

## Market Preferences

Roses must look fresh when sold. The market demand for stem lengths is as follows:

Stemlengths	% market volume	Flower size		
		Big	Medium	Small
1. 70-90 cm	30%	•		
2. 40-60 cm	50%	•	•	•
3. 25-35 cm	20%		•	•

Red is the main colour preference but its market share is declining. Pink and other colours have increased their market share.

A typical colour mix is as follows:

- Red - 40% of market volume
- Pink - 30% of market volume
- Yellow - 20% of market volume
- Other - 10% of market volume (White is 2%, and other colours 8%)

The big and medium flowered varieties account for the major market volume. Spray roses have become increasingly popular.

Cut roses are used in bouquets and in all kinds of flower arrangements and floral decorations. They are also used as dried flowers.

## Production

Cut roses for the export market must be grown in greenhouses. The life span of the rose plants is about 5-8 years, depending on understock, production technology and changes in market demand. Plants are imported from the Netherlands, Germany, France or Israel, and are usually subject to Plant Breeders Rights. These involve a contract between the grower and the breeder which restricts multiplication of the variety. Royalty fees payable by the grower are in general about DM 1.00-1.50 per plant. Investment costs for a rose production unit are comparatively high.

In tropical areas, roses for export are mostly produced at an altitude of 1,200-2,000 m. Individual varieties react differently to specific microclimates with unexpected results such as malformed flowers,

---

## Roses

---

increased disease susceptibility, slow growth and low production. Professional advice should be sought prior to planting and trials are advised.

### Harvesting

The correct harvesting stage for roses is usually dependent upon the number of petals and, hence, on the variety. Varieties with few petals can be harvested when the bud shows the true colour, but before it starts to open at the top. Varieties with many petals can be harvested when the flower has started to open or is well open at the top. Prematurely harvested roses will not perform well and will produce problems with bent necks and failure to open. Flowers that are too mature will lose their market value. Roses should normally be harvested in the morning and harvesting at mid-day must be avoided.

### Grading and Bunching

It is extremely important to handle cut roses carefully after harvesting. To prevent wilting the cut roses are put into water directly after harvesting and transported to the grading facilities as soon as possible. All water should contain a flower preservative throughout the post-harvest handling period.

The grading and packing facilities should be air-conditioned. If there is a delay in grading and bunching the flowers they should be stored in the cold store.

There are three or sometimes four grades for roses, depending on the variety and the market demand. Roses imported direct from overseas suppliers are generally classified as follows:

Grade	Big flowered	Medium flowered	Small flowered	Spray
Extra	80-90 cm	60-70 cm	50-60 cm	50-60 cm
Class 1	70-80 cm	50-60 cm	40-50 cm	40-50 cm
Class 2	60-70 cm	40-50 cm	30-40 cm	30-40 cm
(Class 3)	50-60 cm	30-40 cm	-	-

The roses are graded according to the properties of the specific variety, which may mean that they do not exactly match the above classification. The stem lengths may also be adjusted to meet the specific demands of the importer. The quality requirements for grade Extra are a perfect flower at the correct harvesting stage, a straight and strong stem which can easily support the flower and should be proportionate to the flower size, undamaged foliage and a fresh, residue-free appearance.

---

## Roses

---

After grading, the lower part of the stem is defoliated and the roses are bunched in units of 20 stems. Spray roses are bunched in units of 10 stems. Each bunch is secured with a rubber band around the lower part. The roses are usually bunched with all flowers at the same level. The flower section of each bunch is wrapped for protection in ondulated white paper and sometimes an additional sheet of plastic or waxed paper, often indicating the grade, is wrapped outside the ondulated paper. The stems should be cut to an appropriate length.

### Cold Storage

Successful rose exports require an unbroken cool chain from grading to retail shop. This involves a cold store at the production site, with the capacity for pre-cooling produce after packing, refrigerated transport and access to cold storage at airports. The recommended storage temperature for roses is 2-4<sup>0</sup>C.

Roses should be exported as fresh as possible. The maximum storage time should not exceed 2-3 days in water. Frequent air connections into Germany are therefore essential.

### Packaging

Cardboard boxes used to export cut roses should be strong and preferably telescopic. There are no set standards for rose boxes on the German market, and there are a variety of sizes being used. The Dutch 'A' box (120 x 46 x 25 cm and volume/weight 23 kg) holds about 600 roses of 60-80 cm. A box commonly used by African exporters measures 100 x 40 x 22 cm, (volume/weight 15 kg), holds 960 small flowered roses of 30 cm or 200 big flowered roses of 80 cm. Roses can be exported in mixed boxes as well as with one variety of a specific grade in each box.

After packing, the stems should be secured tightly in the box, either with a strong rubber band attached to plastic hooks pierced through the sides of the box, or with a plastic foam covered wooden stick pressed on top of the stems and nailed in place through the sides of the box.

### Flower Preservatives

A flower preservative should be used whenever roses are handled in water. Several ready-made products available, e.g. Chrysal RVB, or a preservative can be made up using:

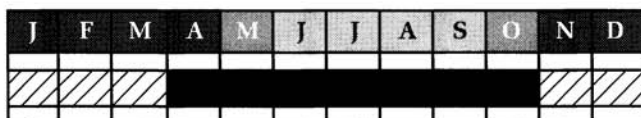
- Either: 30 ppm Silvernitrate + 5% sugar diluted in the water,
- Or: 200 ppm Citric acid + 1.5% sugar diluted in the water

# Roses

## Supply

Roses are the single most important cut flower species on the German market with imports of 984 million in 1990, an increase of 70 million compared to 1989. The major volumes are imported from the Netherlands, but this includes re-exported roses sold at the auctions. Large volumes of cut roses are directly imported from overseas, some on an all-year-round basis. Domestic production accounts for less than 30% of the market. Other countries competing on the German market are Israel, Colombia, Mexico, Kenya and Zimbabwe.

The supply and demand pattern for imported roses is set out below:



Peak sales are major holidays, St Valentine's Day and Mothers' Day.

## Import Legislation (See Appendices 1 and 2)

- A phytosanitary certificate is required
- Quality standards apply, but the application is liberal

## Customs Tariffs (See Appendix 3)

Rates in percentage of the C&F value, tariff numbers 06031011 (1 June-31 October) and 06031059 (1 November-31 May):

Period	Full	ACP countries	LDDC countries
1 June-31 Oct	20%	Free	Free
1 November-31 May	15%	Free	Free

## Prices

Rose prices vary significantly with grade, quality, variety and season. The prices set out below give a typical range for rose per stem in DM. The most demanded varieties obtain prices which are over twice the average while the worst performing variety have prices half the average.

---

## Roses

---

The following prices indicate typical C&F prices for roses in DM/stem.

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Year Av.
High Average	0.48	0.62	0.68	0.75	0.89	0.56	0.52	0.46	0.48
Low Average	0.42	0.55	0.60	0.66	0.78	0.49	0.46	0.40	0.42

Prices are highest in the period of November through to February, when prices are typically over 50% above yearly averages.

### Successful Selling

The reunification of Germany is likely to lead to increased demand for cut roses. Demand is also likely to be stimulated by new and improved varieties. Imports from tropical areas are expected to increase provided that the exporters are trustworthy, meet quality standards and service the market well.

---

## Carnations

---



**Varieties:** Cut carnations can be divided into three groups:

**Standard carnations:** This group represents the traditional big flowered carnation and is dominated by the Sim assortment. Mediterranean varieties have been cleaned and multiplied, and have invigorated the range with a wide variety of colours, shapes and sizes. They now occupy an important share of the market.

Red: Scania, Tanga, Red William, Granada

Pink: Nora, Lena, Sharina, Pink Sim, Castellaro, Candy, Calypso, Manon

Yellow: Pallas, Raggio di Sole, Murcia

White: White Sim, Roma, Candy White

Other: Charmeur, Santiago, Toledo

**Spray carnations:** This assortment came on to the market in the mid 1960's and has increased in popularity:

Red: Rony, Karma

Pink: Annelies, Barbara, Silvery Pink, Medea, Nathalie, Karina,

Yellow: Yellow Odeon, Alicetta, Lior, Cartouche

White: White Royalette, Tibet

Other: Exquisite, Scarlet Elegance, Kissi, Luna.

**Micro carnations:** This type of carnation was only introduced to the market a few years ago and there is limited demand. It may become of interest to overseas producers if the assortment is improved with varieties suitable for tropical production.

There are in total some 300-400 varieties of carnation sold on the German market. The above varieties represent only a fraction of these.



---

## Carnations

---

Varieties should be test grown in a new production area prior to commercial scale production in order to ascertain the most suitable assortment. Some varieties have different immunity against *Fusarium* infestation.

### Market Preferences

The major imports of **standard carnations** into Germany are of the Sim assortment. Traditionally customers asked only for specific colours within this assortment. However, because of the diversity of the Mediterranean assortment, florists are asking for these by variety name or by characteristics. This assortment is expected to increase in popularity. Varieties with strong characteristics are often sold apart in mixed boxes as novelties, for which premium prices are paid. The German market prefers long, strong stems and well filled flowers.

The grade preferences for standard carnations are the following:

Extra (Select), 70-80 cm	- 60% of the market volume
Class 1 (Fancy), 60-70 cm	- 30% of the market volume
Class 2 (Standard), 50-60 cm	- 10% of the market volume

The grades mentioned in brackets are those used for carnations from Colombia which are frequently being adopted in Germany.

The flowers should look fresh and have vivid colour. Colour preferences are as follows:

Red	- 25-30%
Pink	- 25-30%
White	- 15-20%
Novelties	- 30%

Yellow and lilac varieties represent a small part of the German market.

The colour preference for **spray carnations** is mainly pink, followed by red, yellow/orange, white and bicoloured. Stem length preferences for spray carnations are as follows:

Extra (Select), 60 cm	- 40%
Class 1 (Fancy), 50 cm	- 60%

Comparatively large volumes of shorter stemmed spray carnations are exported from Kenya into the German market.

---

# Carnations

---

Standard carnations are used in bouquets, flower arrangements and other floral decorations, primarily mixed with other cut flowers. Spray carnations are mainly used in mixed bouquets, especially pre-fabricated bouquets for the retail trade.

## Production

Cut carnations for export should be grown in greenhouses. Spray carnations are, however, being produced in open field conditions in some areas (e.g. Kenya) but the quality does not compare favourably. Planting material is imported from the Netherlands, Germany, France, Italy or Israel as rooted or unrooted cuttings. Plants have a maximum useful life. Most carnation varieties are subject to Plant Breeders Rights, and a small royalty fee per plant is payable by the grower.

In tropical areas standard carnations are being produced successfully at altitudes of between 1,600-2,000 m and spray carnations at altitudes of 1,200-2,000 m. Spray carnations require a higher temperature than standard carnations. It is important to choose varieties suitable for the specific microclimate.

Carnations are attacked by a wide variety of diseases, especially vascular diseases. An effective preventive pest control programme should be established.

It is recommended that the assortment and production techniques are discussed with both importers and plant suppliers prior to planting.

## Harvesting

Carnations are normally harvested in the morning. The flowers are transported to the grading room as soon as possible after harvest and placed dry in the cold store. They are harvested when the bud has opened and the emerging petals are fully extended but not open past the vertical. Spray carnations should have at least three buds at this stage when harvested. Flowers that are harvested prematurely will not develop well and flowers that have opened too far will obtain a lower market price.

## Grading and Bunching

Grading and bunching should take place as soon as possible after harvest and the flowers should be kept in the cold store until grading can begin. It is important for standard and spray carnations to have strong stems which easily support the flower. The flowers should be regular in shape, well filled

---

## Carnations

---

and of fresh appearance. The flowers, leaves and stems should be free of any residues, the leaves should be curly and the stem and flower undamaged.

The flowers are graded into stem lengths which vary between standard and spray carnations:

Grade	Standard	Spray
Extra (Select)	70-80 cm	60 cm
Class 1 (Fancy)	60-70 cm	50 cm
Class 2 (Standard)	50-60 cm	40 cm

The market for Class 2 is very limited in Germany.

Standard carnations are bunched in units of 20 stems. The stems are secured by two rubber bands, one placed loosely below the blooms and one secured tightly around the lower part of the stems. The stems are arranged so that the blooms overlap each other to make optimum use of space when packing. The stems are cut to the appropriate length and either wrapped in a sheet of soft, white paper or packed without wrapping.

Spray carnations are bunched in units of 10 or 20 stems. The bunches are secured with two rubber bands as described above. They are then wrapped, either as two bunches of 10 stems or one bunch of 20 stems, in a sheet of soft, white paper to minimise damage during transportation.

### Cold Storage

After treatment with a flower preservative, carnations are mostly stored dry. They can be stored at 2°C for up to two weeks but it is advisable to export them as fresh as possible and only to use the longer storage periods in an emergency. The packed boxes should be pre-cooled to 2°C in a pre-cooling unit and then stored at this temperature. 2°C should be maintained throughout the distribution chain, requiring refrigerated transport and access to cold storage at airports.

Carnations are extremely sensitive to ethylene gas and should never be stored or transported together with ethylene producing fruits and vegetables.

### Flower Preservatives

When handling carnations in water it is essential to use clean water, clean buckets and flower preservatives e.g. Chrysal AVB. Alternatively, a

---

## Carnations

---

treatment with Silverthiosulphate (STS) will give adequate protection against ethylene damage.

### Packaging

Cardboard boxes used for carnation exports should be strong and preferably telescopic. There are no set standards for sizes. The Dutch standard 'A' box (120 x 46 x 25 cm, volume/weight 23 kg), will hold the following quantities:

Variety/grade	Number of stems
Standard, Extra, 80 cm	600 per box
Standard, Class 1, 70 cm	700 per box
Standard, Class 2, 60 cm	800 per box
Spray, Extra, 60 cm	400 per box
Spray, Class 1, 50 cm	500 per box

Standard carnations are usually exported in boxes with mixed colours of the same grade. The colour mix is agreed between the exporter and the importer with some flexibility. Spray carnations are exported in boxes of either mixed or single colours, all of the same grade.

After packing, the stems should be secured tightly in the box, either with a strong rubber band which is secured to plastic hooks pierced through the sides of the box, or with a plastic foam coated wooden stick which is pressed firmly on top of the stems and secured with nails through the sides of the box.

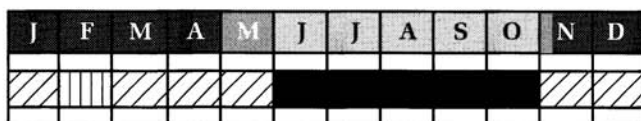
### Supply

Carnations are the second most important cut flower on the German market. Total imports have declined but exports from the developing countries are increasing. This increase is expected to continue since both domestic production and production in the Netherlands are considered uneconomical and are declining. Domestic production of carnations in Germany has dropped to less than 10% of the market demand. Carnations are imported all year round.

The major suppliers are the Netherlands, including re-exported carnations, Israel, Colombia, Kenya, Spain, Italy and Turkey.

## Carnations

The supply and demand pattern for imported carnations is set out below:



### Import Legislation (See Appendices 1 and 2)

- A phytosanitary certificate is required
- Quality standards apply, but the application is liberal

### Customs Tariffs (See Appendix 3)

Rates in percentage of the C&F value, tariff numbers 06031013 (1 June-31 October) and 06031053 (1 November-31 May):

Period	Full	ACP country	LDDC country
1 June-31 Oct.	20%	Free	Free
1 November-31 May	15%	Free	Free

### Prices

Direct imports of carnations have comparatively stable prices. These are often agreed for each grade for a period of one to two months in advance, depending on the season. This is due to the heavy dependency on overseas imports. Prices are not increased significantly prior to peak sales points, but exporters may restricted the volume to take advantage of premium prices obtainable on other markets. Budget C&F prices are listed, in DM/stem, based on the VBA flower auction and C&F prices (inclusive of customs duty) from Colombia:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Year Av.
<b>Standard</b>									
High Average	0.40	0.41	0.43	0.47	0.42	0.42	0.36	0.26	0.37
Low Average	0.35	0.36	0.38	0.41	0.37	0.37	0.32	0.23	0.33
<b>Spray</b>									
High Average	0.30	0.32	0.25	0.33	0.38	0.39	0.31	0.25	0.31
Low Average	0.26	0.28	0.22	0.29	0.33	0.34	0.27	0.22	0.28

---

## Carnations

---

Prices from Colombia C&F Frankfurt inclusive of import duty (in DM):

Variety	Standard	Spray
Stand. Select	0.44	0.37
Stand. Fancy	0.36	0.29
Stand. Standard	0.19	0.17
Novelties	0.41	-

### Promotion and Branding

Carnations are imported by both shipping and distributing wholesalers. Large scale production units should market via shipping wholesalers.

Successful selling will be achieved by supplying a consistently attractive, high quality product in regular shipments which present no problems for the importer. The exporter who can also supply the small, special varieties on a regular basis will be more competitive.

There is scope for increasing carnation exports to Germany from tropical areas because of declining production in Northern Europe.

---

## Chrysanthemums

---



**Varieties:** Cut chrysanthemums can be divided into two groups:

**Big Flowered Chrysanthemums:**

These account for only 10% of the German market for chrysanthemums. They are sensitive to transport damage and are of no interest for export.

**Spray Chrysanthemums:** There are several hundred varieties of spray Chrysanthemums with a wide range of colours, shapes and sizes, and these represent about 90% of the total Chrysanthemum market. Generally larger flowered varieties are preferred to those with tiny, delicate flowers. Some popular varieties are:

White: Cassa Cream, White Reagan, Polaris, Remark, Refour, Daymark, White Spider, Maj. Bosshardt

Yellow: Cassa, Refour Yellow, Golden Polaris, Sunshine, Regoltine, Stafour, Yellow Spider

Pink: Reagan, Moneymaker, Delta, Impala, Mundial, Byoux

Red: Dark Flamenco, Royal Accent

Other: Oranje Reagan, Harlequin, Penny Lane, Funshine

The individual varieties have different development periods and performance varies depending on climatic conditions.

There are major variations in the flower shape. They are often sorted into groups such as single flowered, Anemone, Spiders, Decoratives, Pompoms and Spoon-shaped.

### Market Preferences

Spray chrysanthemums are the most popular on the German market and the larger flowered varieties account for about 90% of the total sales.

---

## Chrysanthemums

---

Stem lengths of 70-80 cm are preferred. Market preferences have moved away from the traditional white and yellow and now a suitable colour mix would be:

White	- 35%
Yellow	- 25%
Pink	- 25%
Red	- 10%
Other	- 5%

It is very important that the flowers have a fresh appearance.

Spray chrysanthemums are mainly used in bouquets mixed with other cut flowers and in floral decorations.

### Production

Chrysanthemums are generally grown in greenhouses but there are some enterprises which are growing under shade net. Plants are imported as unrooted cuttings and rooted at the farm. The life span of a chrysanthemum plant is about three months (only one crop per planting). Some varieties are protected by Plant Breeders Rights and for those the grower must pay a small royalty fee per plant. Chrysanthemums are being successfully produced at altitudes of about 1,200-1,800 m in tropical areas

Chrysanthemums are sensitive to several pests and diseases and must be sprayed regularly.

Chrysanthemums are short day plants i.e. the plant remains vegetative in long day conditions and flowers in short day conditions. The day length can be controlled artificially. It is lengthened with incandescent light, if they are being produced in short day conditions, and shortened by covering the plants with black cloth, if they are being produced in long day conditions. A combination of both can be used. In tropical areas day lengthening is necessary during the first 3-4 weeks after planting and the natural short day will suffice for flower induction.

It is recommended that the varieties, production planning and packing units are agreed jointly with the German importer.

### Harvesting

Chrysanthemums are harvested in the morning and the flowers should be put in clean water as soon as possible after harvest and transported to the grading facilities. Flowers are harvested when the outer petals, on a minimum of five buds, are almost developed and the inner petals are emerging. Prematurely



---

## **Chrysanthemums**

---

harvested flowers will not open, and flowers that have opened too far will have a lower market value. Harvesting time for each planting is about 10-14 days.

### **Grading and Bunching**

Chrysanthemums are graded by stem length, flower appearance, number of flowers, stem straightness, stem strength and freshness. Spray chrysanthemums are mainly sold as grade Extra on the German market, but it is possible to find markets for shorter grades in limited volumes. Varieties which have difficulty in reaching grade Extra stem lengths are accepted in

shorter grades. Grade Extra should contain flowers with a minimum 70 cm stem length and at least five developed flower buds on each stem. The stem should be proportionate to the flower cluster and easily support the flowers. The leaves should be fresh and green. Bent stems, damaged leaves, visible residues, visible pests etc. are not accepted.

The lower stem should be defoliated up to 15-20 cm and bunched in units of five stems and secured with a rubber band. The bunch should be cut to the appropriate length and placed in a plastic sleeve.

### **Cold Storage**

Chrysanthemums should be pre-cooled after packing, and be stored in water in a cold store at a temperatures of 2°C. They can be held for about 3-4 weeks. However, it is recommended that the flowers are exported as fresh as possible. Prolonged storage should be used only in an emergency. Chrysanthemums are sensitive to high temperatures after packing. Exporters must use refrigerated transport and cold storage at airports.

### **Packaging**

Spray chrysanthemums are imported into the German market in a variety of different export boxes, both in mixed colours and as boxes of single varieties. The Dutch standard 'A' box (120 x 46 x 25 cm, volume/weight 23 kg) will hold about 200 stems of Extra grade spray chrysanthemums. However, smaller boxes are often preferred by the German importers. A box of 100x40x20 cm (volume/weight 15 kg) or 100x30x20 cm (volume/weight 12 kg) will hold about 125 stems of Extra grade spray chrysanthemums. Cardboard boxes used for export of chrysanthemums should be strong and telescopic.

Spray chrysanthemums have a very low stem:box ratio and low air-cargo rates are necessary to export them profitably.

# Chrysanthemums

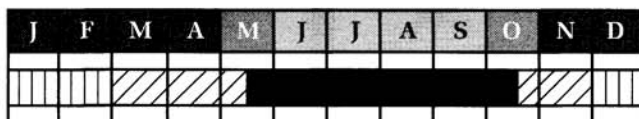
## Flower Preservatives

A flower preservative should be used whenever chrysanthemums are handled in water, such as Chrysal, or a solution 1,000 ppm of household bleach.

## Supply

Chrysanthemums are a major cut flower on the German market. Total imports reached 322 million stems in 1990, which was an increase of 20 million pieces from 1989. The main import seasons are October-December and April-May, but overseas exporters of chrysanthemums often find a good market in January-March, when the quality produced in Northern Europe is very poor due to inadequate light conditions. Imports of chrysanthemums to Germany have increased following a decrease of the domestic production. The major suppliers of spray chrysanthemums into the German market are the Netherlands, followed by Italy, Israel, Kenya and Spain. The exports of spray chrysanthemums from the Netherlands include an increasing volume of re-exported flowers originating from overseas exporters.

The supply and demand pattern for imported chrysanthemums is set out below:



## Import Legislation (See Appendices 1 and 2)

- A phytosanitary certificate is required
- Quality standards apply, but the application is liberal

## Customs Tariffs (See Appendix 3)

Rates in percentage of the C&F value, tariff numbers 06031025 (1 June-31 October) and 06031065 (1 November-31 May):

Period	Full	ACP countries	LDDC countries
1 June-31 Oct.	20%	Free	Free
1 November-31 May	15%	Free	Free

---

## Chrysanthemums

---

### Prices

Import prices for spray chrysanthemums on the German market vary considerably depending on varieties, quality variations, seasonality, regularity. In general, prices are correlated to the expected prices at the Dutch flower auctions and to domestic prices. Prices for direct imports of spray chrysanthemums from overseas exporters are usually agreed for periods of 1-2 months, with the lowest prices in the summer and premium prices in the period January- March. Prices for direct imports from overseas are usually agreed at one price per grade for the whole assortment and by variety.

The following prices indicate typical C&F prices for roses in DM/stem and are based on VBA auction prices.

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Year Av.
High Average	0.55	0.75	0.82	0.82	0.62	0.50	0.42	0.45	0.53
Low Average	0.50	0.65	0.72	0.72	0.54	0.44	0.37	0.40	0.47

The low prices in the spring reflect poor quality. Good quality product during this period will attract premium prices. The above prices are average prices for all qualities and should be considered as minimum C&F prices inclusive of eventual import duty.

### Successful Selling

The key to successful selling of spray chrysanthemums on the German import market is regular shipments, consistently high quality produce, reliable packing, attractive assortments and a good relationship between the exporter and the importer. Spray chrysanthemums are very suitable for large production units and are therefore often imported by shipping wholesalers.

---

## Gypsophila

---



**Varieties:** The major variety is Perfecta, a brilliant white flower bred from *Gypsophila paniculata*, with more than 95% of the market. The other variety used is Bristol Fairy.

### Market Preferences

The German market prefers gypsophila with a uniform flowering spray, brilliant white colour, light green foliage and fairly long stems. Gypsophila which has been produced in open field conditions and has dark green foliage is also sold. This has fewer flowers and, although it is stronger, is less in demand.

Gypsophila contaminated with or damaged by leafminers is not accepted nor are stems with brown flowers.

Gypsophila is always sold retail in combination with other cut flowers and is used in bouquets and smaller flower arrangements.

### Production

Gypsophila is usually produced in greenhouses but is also produced in open field conditions in some countries. Plants are imported from the Netherlands or Israel, either as tissue culture plants or as tipcuttings from tissue culture motherplants. Only one harvest is, in general, obtained from each planting. Gypsophila is produced successfully in tropical areas at altitudes of 1,400-2,000 m.

This plant requires long day conditions to induce flowers. The daylength can be extended with incandescent light when it is grown in short day conditions.

Gypsophila is very sensitive to infestation by leafminers. This will dramatically reduce the market value. It is also sensitive to flying and pollinating insects during the flowering period as

---

## **Gypsophila**

---

the flowers turn brown after pollination. When producing gypsophila for export it is very important to apply an effective preventive pest control programme.

### **Harvesting**

The lateral branches are harvested when 1/3-1/2 of the flowerbuds on the individual branch are open. These branches are then placed overnight in water which contains a flower preservative including sugar. They should be held at 20-22°C and illuminated with incandescent light (25 watt per sq.m.). These conditions will induce all the flowers to open simultaneously.

Harvesting is very time consuming and represents the major labour cost in gypsophila production.

### **Grading and Bunching**

In general, only grade Extra is accepted on the German market, but it is possible to find a limited market for shorter grades. Grade Extra should have a stem length of 60 cm and a uniform flower spray. Stems are discarded if they are too weak or if they have brown flowers and/or leafminers.

The stems are bunched in units of five to a bunch and secured with a rubber band. Five bunches are then put together in a bundle and secured with another rubber band. The bundles are placed in a plastic sleeve, or wrapped in a sheet of soft white paper, to protect the sprays. Gypsophila produced in open field conditions is always wrapped in paper and not sleeved, due to the risk of damage by fungi during post-harvest handling.

### **Cold Storage**

Gypsophila should be exported fresh at all times and not be held for more than 3-4 days in cold storage. After packing the boxes should be pre-cooled to 3-4°C and kept at this temperature in the cold store. The flowers are very sensitive to high temperatures after packing so refrigerated transport and access to cold storage facilities at airports is necessary.

Gypsophila is very sensitive to ethylene gas and should not be stored or transported together with ethylene producing fruits and vegetables.

### **Packaging**

There are several types of boxes being used for exports of gypsophila. Cardboard boxes should be strong and preferably telescopic. The Dutch standard 'A' box (120 x 46 x 25 cm, volume/weight 23 kg) will hold about 30 bundles.

# Gypsophila

Gypsophila has a low stem to box ratio and a competitive air cargo rate is necessary to export this product successfully.

## Flower Preservatives

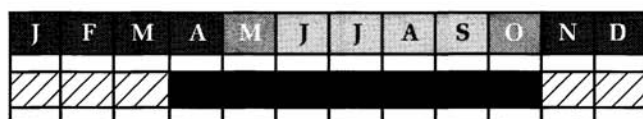
Gypsophila is very sensitive to ethylene gas and a pre-treatment with Chrysal AVB or STS (Silverthiosulphate) is recommended.

## Supply

There are no separate statistics available for the imports of gypsophila into the German market. However, the major supplier is the Netherlands and direct imports from overseas exporters are coming from Israel, Colombia and Kenya. Domestic production is small and gypsophila is imported all the year round. The seasonal variation in market demand is closely correlated to the demand for other cut flowers since gypsophila is always mixed with these products. The market is very good in October-May and drops in the summer. Peak sales points are major holidays, St Valentine's Day and Mothers' Day.

Competing products are Aster 'Monte Casino', which was recently introduced to the market, and Ammi majus, of which a large portion is tinted.

The supply and demand pattern for imported Gypsophila is set out below:



## Import Legislation (See Appendices 1 and 2)

- A phytosanitary certificate is required
- Quality standards apply, but the application is liberal

## Customs Tariffs (See Appendix 3)

Rates in percentage of the C&F value, tariff numbers 06031029 (1 June-31 October) and 06031069 (1 November-31 May):

Period	Full	ACP countries	LDDC countries
1 June-31 Oct.	20%	Free	Free
1 November-31 May	15%	Free	Free

---

## Gypsophila

---

### Prices

Gypsophila prices tend to change with the seasonal variation in demand, i.e. higher prices in the period October-May and lower prices in the summer however, during these periods they are usually stable. C&F prices in DM and based on VBA flower auction prices are given below:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Year Av.
High Average	0.35	0.75	0.95	0.72	0.82	0.68	0.60	0.25	0.63
Low Average	0.30	0.65	0.85	0.63	0.72	0.60	0.55	0.22	0.55

Prices from overseas exporters tend to be agreed for periods of 1-3 months.

### Successful Selling

The key to a successful gypsophila export project is appropriate post-harvest handling techniques, regular supplies, good quality and a brilliant white colour. Gypsophila is imported both by shipping wholesalers and by distributing wholesalers.

---

## Summer Flowers

---



*Delphinium*

**Varieties from seed:** Delphinium ajacis  
Ammi majus  
Limonium sinuatum (Statice)  
Limonium latifolium  
Limonium perezii  
Anethum graveolens  
Euphorbia marginata  
Molucella  
Solidaster  
Celosia plumosa

**Varieties from plants:** Trachelium  
Solidago  
Aster 'Monte Casino'  
Phlox paniculata

The range consists mainly of species common in Northern European gardens in the summer. The off season marketing of summer flowers has developed over the last decade and the market is still expanding. The assortment is expected to increase with new species.

### Market Preferences

Summer flowers were introduced to revitalise and increase the traditional assortment of cut flowers in the winter and to provide the makers of ready-made bouquets with a price-competitive products. New species and varieties are being tested on the market every year. Market preferences are difficult to establish since many of the varieties have only been on the market for a short period. The list in order of popularity is as follows:

Delphinium ajacis (mainly pink and blue),  
Limonium sinuatum (Statice, 90% blue),  
Ammi majus,  
Solidaster,  
Phlox paniculata (mainly pink and lilac),  
Limonium latifolia,  
Limonium perezii (mainly blue),  
Molucella,  
Solidago,  
Aster 'Monte Casino',  
Anethum graveolens,  
Celosia plumosa.



---

## Summer Flowers

---

The flowers are imported either as single products or in ready-made bouquets. They are used in mixed bouquets and in flower arrangements and floral decorations.

### Production

Most varieties in this assortment are grown in open field conditions but some will need shade net e.g. Trachelium, or greenhouse protection e.g. Aster 'Monte Casino' and Molucella. The amount of protection required will also depend on the microclimate at a specific production site, since some of these varieties are sensitive to rainfall.

The varieties grown from seed in open field conditions involve low investment costs. Flower production based on imported plants and protection is significantly more expensive to establish. However, the latter varieties suffer less from sudden and unexpected increases in production affecting the market. Seed and plants for motherstock are imported from the Netherlands or Germany.

All the above varieties will produce only one crop per planting, after which the area is replanted. A grower will usually produce only one or possibly a few of the above varieties, never the full assortment.

Trachelium is a long day plant and will need extended daylength to flower in tropical areas. This is done by using incandescent light.

The above assortment is successfully produced at altitudes of 1,200-1,600 m in tropical areas.

### Harvesting

The varieties are harvested at different development stages:

Bud showing colour: Delphinium ajacis

Bud semi-opened: Limonium  
Solidago  
Solidaster  
Aster 'Monte Casino'  
Anethum graveolens  
Ammi majus  
Trachelium  
Phlox paniculata

Bud open: Euphorbia marginata  
Molucella  
Celosia plumosa

The flowers should be put in water containing a flower preservative and transported to the grading facilities as soon as possible after harvest.

---

## Summer Flowers

---

### Grading and Bunching

Most of the summer flower varieties are sold as Extra on the German market, with stem lengths varying from 50 cm up to 80 cm depending on the variety. However some, such as Ammi majus, are sold in shorter grades as well, especially to the makers of ready-made bouquets. Most of the above varieties produce an equal stem length if appropriate production technology is applied.

The stems should be straight, strong enough to support the flower easily and proportionate to the flower. The leaves should be clean and undamaged with no visible residues or diseases. The flowers should be uniform and fresh. If there are any delays in handling the flowers in the grading facilities they should be kept in cold storage at 3-4°C.

Most varieties are bunched in units of five or ten stems and secured with a rubber band. Some, e.g. Aster 'Monte Casino', are put into bundles of 5 x 5 stems, while others, e.g. Ammi majus, are placed in bundles of 5 x 10 stems. The bundles are also secured with a rubber band. Soft white wrapping paper is preferred.

### Cold Storage

Many varieties in this range are delicate and should not be stored for more than 3-4 days. They should be pre-cooled to 3-4°C after packing and stored at this temperature. Summer flowers are mostly very sensitive to high temperatures and exporters should use refrigerated transport and arrange access to cold storage facilities at airports.

### Packaging

Most of the summer flowers imported to Germany are exported from Israel or Africa and two types of cardboard box are most commonly used. These are the Dutch standard 'A' box (20 x 46 x 25 cm, volume/weight 23 kg), which will hold 400-600 summer flowers. A box measuring 100 x 40 x 22 cm (volume/weight of 18 kg) will hold approximately the following volumes, depending on quality:

Delphinium ajacis: about 400  
Ammi majus: about 600-800  
Limonium sinuatum: about 500  
Limonium latifolium: about 400-450  
Limonium perezii: about 300-350  
Anethum graveolens: about 600-800  
Euphorbia marginata: about 400-450  
Molucella: about 350-400  
Celosia plumosa: about 400-450  
Trachelium: about 350-400  
Solidago/Solidaster: about 500

## Summer Flowers

Aster 'Monte Casino': about 300-400

Phlox paniculata: about 300-400

Cardboard boxes should be strong and of telescopic design. The flowers should be secured tightly in the box with a rubber band across the stems, which should be secured by plastic hooks pierced through the sides of the box.

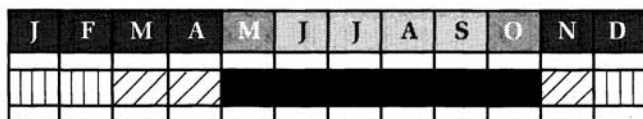
### Flower Preservatives

It is recommended that a ready-made flower preservative is used when handling summer flowers in water.

### Supply

Most of this assortment are grown as summer flowers in the gardens of Northern Europe and there is very little export value at this time. The major export market into Germany is from November until May, with peak sales points during major holidays, St Valentine's Day and Mothers' Day. There are no separate statistics available for the imports of summer flowers, but the major exporting countries are the Netherlands, including re-exported flowers from many countries, Israel, Kenya, Zimbabwe and Zambia. Several countries in Africa are presently setting up production for export.

The supply and demand pattern for imported summer flowers is set out below:



### Import Legislation (See Appendices 1 and 2)

- A phytosanitary certificate is required for Limonium imported from non-EC countries
- Quality standards apply, but the application is liberal

### Customs Tariffs (See Appendix 3)

Rates in percentage of the C&F value, tariff numbers 06031029 (1 June-31 October) and 06031069 (1 November-31 May):

Period	Full	ACP countries	LDDC countries
1 June-31 Oct.	20%	Free	Free
1 November-31 May	15%	Free	Free

## Summer Flowers

### Prices

Low priced varieties in the summer flower assortment usually have low production costs. Novelties tend to be very high priced during their introductory period. Profitability is generally satisfactory both for high priced and low priced varieties.

Several varieties are sensitive to oversupply which results in significant price fluctuations. This is partly because the majority of these varieties are comparatively small when compared to the major cut flower species.

C&F prices in DM, and based on VBA flower auction prices, are set out below:

Variety	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Year Av.
Delphinium	0.24	0.28	0.25	0.41	0.52	0.30	0.28	0.38	0.25
Ammi majus	0.21	0.21	0.23	0.32	0.28	0.25	0.30	0.31	0.25
Statice	0.26	0.35	0.31	0.47	0.28	0.29	0.29	0.21	0.29
Limonium									
- latifolia	0.24	0.33	0.17	0.62	0.66	0.68	0.36	0.25	0.32
- perezii	0.20	0.31	0.21	0.41	0.34	0.42	0.35	0.26	0.28
Anethum									
graveolus	0.25	0.26	0.22	0.26	0.36	0.21	0.18	0.28	0.19
Euphorbia									
marginata	0.16	0.23	0.29	0.31	0.28	0.23	0.22	0.19	0.25
Molucella	0.35	0.36	0.51	0.34	0.39	0.36	0.31	0.49	0.41
Solidaster	0.28	0.29	0.30	0.52	0.47	0.39	0.46	0.29	0.33
Solidago	0.23	0.45	0.48	0.48	0.53	—	0.25	0.32	0.23
Celosia									
plumosa	0.22	0.43	—	—	—	—	0.30	0.20	0.24
Trachelium	0.56	0.83	0.72	0.63	0.70	0.70	0.46	0.52	0.45
Aster									
Monte Casino	0.64	0.61	0.37	0.62	0.40	0.28	0.61	0.56	0.52
Phlox									
paniculata	0.31	0.39	0.29	0.56	0.66	0.65	0.57	0.43	0.38

### Successful Selling

Summer flowers are a developing market which should be watched closely so that production can be adjusted accordingly. Introducing a novelty on to the German market will greatly improve the image of the exporter and the importers' interest in his products. It is always important to ensure regular shipments of high quality fresh flowers.

---

## Alstroemeria

---



**Varieties:** Red: Marina  
Orange: King Cardinal  
Pink: Rosario, Pink Triumph  
Yellow: Yellow King, Rio  
Other: Libelle, Annabel, Flamenco,  
Jubilee, Jacqueline

These are the major varieties imported into Germany. Different names are used for the same varieties from different countries in order to avoid the significant royalty fees payable for alstroemeria plants.

### Market Preferences

Alstroemeria has become a major cut flower on the German market. In general only Extra grade is imported but low prices are paid for a limited supply of shorter grades. All alstroemerias are bicoloured, with one or two more dominating shades. The varieties with more shades are preferred to those with only one dominating shade. Pink or lilac varieties are preferred. Pink and other soft shades represent more than 60% of the total volume. It is very important that the flowers have a fresh appearance.

Alstroemeria is mainly used in mixed bouquets and in ready-made bouquets for supermarkets and food stores.

### Production

Alstroemerias are being produced successfully in tropical areas at altitudes of 1,600-2,500 m, both in greenhouses and in open field conditions. The individual varieties may perform very differently depending on climatic conditions. Advice should be sought concerning the assortment prior to planting. Individual varieties may also have different cropping periods which will affect project planning.

Plants are imported from the Netherlands and will produce flowers over a period of about three

---

## **Alstroemeria**

---

years in greenhouses, and up to five years in open fields. The actual cropping length depends on the variety and growing conditions. Most varieties are protected by Plant Breeders Rights which involve a contract with the breeder concerning restricted multiplication. A significant royalty fee is payable.

### **Harvesting**

The flowers are harvested in the mornings when the buds show their true colour, but prior to bud opening. Immediately after harvest they are put in water containing a flower preservative and transported to the grading room.

### **Grading and Bunching**

The flowers are graded by the following criteria:

Extra: stem length - 80 cm, min. 5 - 7 flowers per stem

Class 1: stem length - 70 cm, min. 3 - 5 flowers per stem

If properly grown most varieties will produce only Extra grade flowers. The general appearance should be fresh and in proportion, free of any residues with a straight stem and undamaged foliage.

The flowers are bunched in units of five stems per bunch in Extra grade and ten stems per bunch for Class 1. The stems are secured with a rubber band and cut to appropriate lengths. The bunches are placed in a plastic sleeve.

### **Cold Storage**

Immediately after bunching the flowers should be put in water containing a flower preservative and placed in the cold store for treatment at 5°C (see flower preservatives). After treatment, the flowers should be packed and the boxes pre-cooled to 3-4°C and stored at the same temperature. Alstroemeria should always be exported as fresh as possible and should not be stored for more than 3-4 days.

Alstroemerias are sensitive to high temperatures. Transport should be refrigerated and with cold storage at the airport. The flowers are very sensitive to ethylene gas and should not be stored with ethylene producing fruits or vegetables.

### **Packaging**

Export boxes for alstroemeria should be strong and telescopic. The Dutch standard 'A' box (120 x 46 x 25 cm, volume/weight 23 kg) will hold about 400 grade Extra flowers.

# Alstroemeria

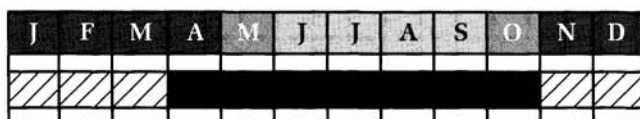
## Flower Preservatives

One of the major problems with overseas imports of alstroemeria has been yellowing leaves. This problem can be eliminated through a pre-treatment with Chrysal SVB for a period of 20 hours at 5°C.

## Supply

Alstroemeria is imported into Germany all the year round. The major import season is November-April, followed by a slack season during summer. The main supplier is the Netherlands, followed by Kenya and Israel. Domestic production is small.

The supply and demand pattern for imported alstroemeria is set out below:



## Import Legislation (See Appendices 1 an 2)

- A phytosanitary certificate is not required
- Quality standards apply, but the application is liberal

## Customs Tariffs (See Appendix 3)

Rates in percentage of the C&F value, tariff numbers 06031029 (1 June-31 October) and 06031069 (1 November-31 May):

Period	Full	ACP countries	LDDC countries
1 June-31 October	20%	Free	Free
1 November-31 May	15%	Free	Free

## Prices

Prices for alstroemeria are relatively stable. Import prices from overseas exporters are often agreed for periods of 1-2 months in advance. The following prices indicate typical C&F prices in DM/stem and are based on VBA auction prices.

## Alstroemeria

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Year Av.
High Average	0.51	0.56	0.58	0.76	0.77	0.69	0.39	0.29	0.38
Low Average	0.45	0.49	0.51	0.67	0.68	0.61	0.34	0.26	0.33

### Successful Selling

The two most important factors for successful selling of alstroemerias on the German market are a fresh product and an attractive assortment. Other important factors are reliable quality and regular scheduled shipments. Alstroemerias are being imported into Germany both by shipping wholesalers and by distributing wholesalers.



---

## Gladiolus

---



**Varieties:** There are an numerous gladiolus varieties and the producer need a mixture. The major varieties can be divided into two groups:

**Big flowered:**

Red: Fidelio, Hunting Song

White: White Friendship

Pink: Friendship, Rose Supreme

Orange: Peter Pears

Yellow: Priscilla, Nova Lux

Bicoloured: Margaret Rose

**Small Flowered:**

Red: Robinette

White: Alba

Pink: Charm, Charming Beauty

Orange: Guernsey Glory

Bicoloured: Nymph

### Market Preferences

Small flowered gladioli have gained in popularity on the German market and interest in the big flowered varieties has declined. Importers prefers boxes of mixed colours, with equal amounts of orange, red, pink, yellow and lilac and about 5% white. Only Extra grade is imported with minimum 70 cm stems. The small flowered varieties are expected to increase in volume, provided that a larger assortment is introduced to the market.

Gladioli are used mainly in mixed bouquets and floral decorations

### Production

Gladioli are successfully produced for export in tropical areas at altitudes of 1,200-2,000m and are produced in open field conditions. Corms are imported from the Netherlands. After harvesting, the corm can be re-grown until it has reached an appropriate size to produce export quality flowers and multiplied.

---

## **Gladiolus**

---

Major problems in gladiolus production are viruses from contaminated corms and fungal diseases. It is important to start with good planting material.

### **Harvesting**

The flowers are harvested in the mornings when the lower buds have just begun to show their true colour. The flowers are immediately transported to the grading facilities, where they are stored in the cold store until grading. Gladiolus flowers open very rapidly and if they have opened too far they will lose their market value.

### **Grading and Bunching**

Flowers are graded into Extra grade only, with stem lengths of 70-80 cm. Other grading criteria are undamaged flowers, clean and straight stems, absence of virus discolouration on leaves and flowers and freedom from visible fungi.

The flowers are bunched in units of five and secured with a rubber band. Some exporters wrap the bunch in a sheet of soft, white paper, but most pack the bunches without wrapping.

### **Cold Storage**

It is important to maintain the flowers at a low temperature at all times to prevent the flowers from opening. The flowers should be held in hold storage before grading. Gladioli should be pre-cooled after packing, and the flowers should be stored, upright, at 2-3°C. It is necessary to use refrigerated transport and to have access to cold storage facilities at the airport. To ensure freshness it is recommended that storage periods should not exceed 3-4 days.

### **Packaging**

Cardboard boxes used for gladiolus export should be strong and telescopic. A commonly used carton measures 100x35x25 cm, in which 16 bunches of mixed colours are packed (80 flowers). The cartons must be handled and stored standing in a vertical position or the flower spikes will bend because of geo-tropism.

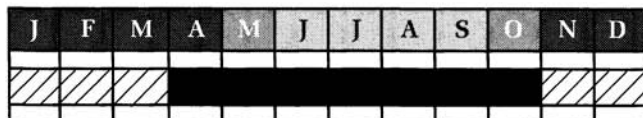
### **Supply**

The total imports of gladioli to Germany were 40 million stems in 1990, and have been falling by about 15% per annum. The decrease is due to a declining market for gladioli, and not increased domestic production. It is

## Gladiolus

expected that the introduction of small flowered varieties will regenerate the popularity of gladioli. The major exporting countries into the German market are the Netherlands, Spain, Israel and Zambia.

The supply and demand pattern for imported Gladiolus is set out below:



### Import Legislation (See Appendices 1 and 2)

- A phytosanitary certificate is required
- Quality standards apply, but the application is liberal
- Imports from non EC countries are prohibited from 1 May-31 October, when Gladiolus rust is known to occur.

### Customs Tariffs (See Appendix 3)

Rates in percentage of the C&F value, tariff numbers 06031021 (1 June-31 October) and 06031061 (1 November-31 May):

Period	Full	ACP countries	LDDC countries
1 June-31 October	20%	Free	Free
1 November-31 May	15%	Free	Free

### Prices

The seasonal variation in demand boosts prices in the winter and lowers them in the summer. The following prices indicate typical C&F prices in DM/stem and are based on VBA auction prices.

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Year Av.
High Average	0.30	0.38	0.48	0.55	0.55	0.59	0.76	0.42	0.23
Low Average	0.25	0.33	0.43	0.48	0.48	0.51	0.67	0.37	0.20

Gladioli are sold by colour and not by variety when exported directly to Germany and prices are agreed for periods of 1-2 months.

### **Successful Selling**

The key to successful exports of gladioli into the German market are appropriate post-harvest handling, regular shipments of good quality flowers and a good range. Gladioli are being imported both by shipping wholesalers and distributing wholesalers. A competitive air cargo rate is essential.

---

## Irises

---



**Varieties:** The assortment is limited but the major varieties are:

Blue: Ideal, Professor Blauw

Purple: Blue Magic

Yellow: Yellow Queen

White: Wedgewood, Apollo

### Market Preferences

Blue varieties are most popular on the German market (80% of the total) followed by purple (10%), yellow (5%) and white (5%).

Irises are mostly used in bouquets mixed with other flowers and in floral decorations.

### Production

Irises are produced from bulbs imported from the Netherlands. They are successfully grown at an altitude of 1,200-1,600 m in tropical areas. They can be produced both in open field conditions and in plastic greenhouses, mainly depending on the specific microclimate. Each bulb will produce one flower.

### Harvesting

The flowers should ideally be harvested in the morning. They are harvested when the colour starts to be visible. The flowers open very rapidly and must be transported to the cold store immediately after harvest. Flowers that are too mature have no market value.

### Grading and Bunching

Irises produce a very uniform quality and only malformed and over-mature flowers are rejected. The stems should be 50-60 cm, straight and free of residues and diseases.

The flowers are bunched in units of ten stems to a bunch, secured with a rubber band and then cut to an appropriate length. The bunches are then

## Irises

bundled with five bunches to a bundle, secured with a rubber band and then either placed in a plastic sleeve or wrapped in a sheet of soft, white paper.

### Cold Storage

After bunching, the flowers should be packed immediately and pre-cooled to 2-3°C in a pre-cooling unit. They should be stored at this temperature until they are exported. Irises should be exported fresh at all times. They are very sensitive to high temperatures and it is necessary to use refrigerated transport and to have access to cold storage facilities at the airport.

### Packaging

Irises are heavy and require a very strong cardboard box, preferably of telescopic design. The standard Dutch 'A' box (120 x 46 x 25 cm, weight 23 kg) will hold about 600 flowers.

### Supply

Irises are mainly imported to Germany from the Netherlands. There are no import statistics available on total imports.

The supply and demand pattern for imported irises is set out below:

J	F	M	A	M	J	J	A	S	O	N	D

### Import Legislation (See Appendices 1 and 2)

- A phytosanitary certificate is not required
- Quality standards apply, but the application is liberal

### Custom Tariffs (See Appendix 3)

Rates as percentage of the C&F value, tariff numbers 06031029 (1 June-31 October) and 06031069 (1 November-31 May):

Period	Full	ACP countries	LDDC countries
1 June-31 October	20%	Free	Free
1 Nov.-31 May	15%	Free	Free

---

## Irises

---

### Prices

Prices for irises are very stable throughout the season.

Set out below are budget C&F prices for irises, in DM, based on VBA flower auction prices:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Year Av.
High Average	0.19	0.24	0.25	0.28	0.24	0.19	0.20	0.16	0.20
Low Average	0.17	0.21	0.22	0.24	0.21	0.17	0.18	0.14	0.18

### Successful Selling

Successful exports of irises into the German market depend mainly on low air-cargo rates, regular shipments and good quality flowers.

---

## Lilies

---



**Varieties:** The assortment of lilies imported to Germany can be divided into two groups:

**Stem Lily:**

Asiatic varieties: Enchantment (orange), Connecticut King (yellow), Apeldoorn (orange), Cote d'Azur (pink), Hilde (yellow), Mont Blanc (cream), Montreux (pink), Sun Ray (yellow)

Oriental varieties: Star Gazer (pink), Journey's End (pink), Laura Lee (dark pink), Casablanca (white)

**Speciosum:**

Uschida, Rubrum (both pink)

**Longiflorum:**

White Europe

There is a large assortment of lilies being exported to Germany from the Netherlands but, because of high prices for bulbs, overseas imports consist of a very narrow assortment. This is expected to change in the future.

### Market Preferences

The main varieties are Enchantment and Connecticut King, which account for more than 60% of the total market. However, German importers would like to import a larger assortment if they were available from overseas exporters. Long stemmed lilies are preferred and almost all imported products are of Extra grade.

Stem lilies are used in bouquets mixed with other cut flowers and also in flower arrangements and floral decorations. *Lilium longiflorum* is only used in floral decorations.



## Production

Lilies are, in general, produced under shade net in tropical areas. They are produced successfully at altitudes of 1,200-1,800 m in tropical areas and down to sea level in South Africa. Bulbs are imported from the Netherlands. These can be re-grown after harvest.

## Harvesting

Harvesting is done in the mornings when the lower buds on the spike are fully developed but before they burst open. After harvest, the flowers should be put in water containing a flower preservative and transported to the grading facilities.

## Grading and Bunching

Stem lilies are graded according to stem length and the number of buds which will open in water. The quality depends to a large extent on the size of the bulbs planted, but also on the variety. A grade Extra should be 70-80 cm long and have minimum of 7-9 buds showing colour. The flowers should be free of any residues with healthy leaves and a straight, strong stem. Class 1 should be 60-70 cm with 6-7 buds.

The lower stem is defoliated after grading. The flowers are bunched in units of ten stems to a bunch, secured with a rubber band, and cut to an appropriate length. Each bunch is placed in a plastic sleeve.

*Lilium longiflorum* is sold per flower and, depending on the size of the bulb or if seedlings have been grown, may have up to 8 flowers per stem. They are harvested at the same stage as stem lilies. The flowers are bunched in units of 20 flowers per bunch and secured with a rubber band. The bunch is wrapped in a sheet of soft, white paper.

## Cold Storage

After packing the boxes should be pre-cooled to 3°C and stored at this temperature until exported. They are also sensitive to high temperatures and should be distributed via a cool chain. Lilies are sensitive to ethylene gas and should not be stored with ethylene producing fruits or vegetables.

## Packaging

There is no standard cardboard box for lilies on the German market, but the Dutch standard 'AA' box, (120 x 46 x 29 cm, volume/weight 27 kgs), will hold about 300 stem lilies and about 30 bunches of *Lilium longiflorum*. The boxes should be strong and of telescopic design.

# Lilies

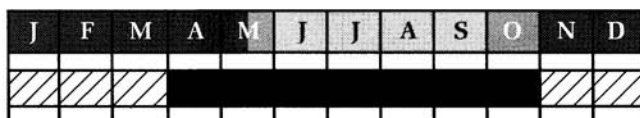
## Flower Preservatives

The flowers should be treated with a flower preservative, either STS (Silverthiosulphate) or Chrysal LVB after harvest, in order to avoid problems with ethylene, leaf drop and flower abscission.

## Supply

The major import market is in the period November-May, with peak sales points at major holidays. There are no specific import statistics for lilies into Germany, but the major exporting countries are the Netherlands, Israel and South Africa.

The supply and demand pattern for imported lilies is set out below:



## Import Legislation (See Appendices 1 and 2)

- A phytosanitary certificate is not required
- Quality standards apply, but the application is liberal

## Customs Tariffs (See Appendix 3)

Rates in percentage of the C&F value, tariff numbers 6031029 (1 June-31 October) and 06031069 (1 November-31 May):

Period	Full	ACP countries	LDDC countries
1 June-31 October	20%	Free	Free
1 November-31 May	15%	Free	Free

## Prices

Prices vary significantly depending on variety and season. Prices are higher in November-April and lower in the summer and before peak sales periods. Direct import prices are agreed for periods of 1-2 months, and do not reflect sudden fluctuations on the market. If a wider assortment is exported into the German market, it is recommended that one price is agreed for the major varieties and another higher one for the more exclusive assortment.

## Lilies

Set out below are budget C&F prices for the main stem lily varieties, in DM, based on VBA flower auction prices:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Year Av.
High Average	0.50	0.52	0.82	0.76	0.96	0.78	0.55	0.41	0.44
Low Average	0.44	0.46	0.72	0.66	0.83	0.68	0.48	0.36	0.39

Some varieties, notably Hilde and Casablanca, obtain higher prices.

### Successful Selling

High quality and an attractive assortment combined with regular shipments and good packing are the essential ingredients for successful lily exports to the German market. It is extremely important to be flexible with varieties and production to meet the requirements of the importers. Lilies are being imported to Germany by both shipping wholesalers and distributing wholesalers.

---

## Exotic Bulbs and Corms

---



*Ornithogalum arabicum*



*Nerine bouwdenii*

**Assortment:** The assortment is expected to increase in the future to satisfy the increasing market demand for novelties. The present major species are:

*Liatris callilepis*  
*Ornithogalum arabicum*  
*Ornithogalum thyrsoides*  
*Nerine bouwdenii*

### Market Preferences

*Ornithogalum thyrsoides* represents about 90% of the market for *Ornithogalum*, and *Ornithogalum arabicum* about 10%. These varieties only exist in white, but *Ornithogalum thyrsoides* is often tinted with other colours.

*Liatris* has both blue and white forms but blue is preferred and represents about 95% of the *Liatris* market.

*Nerine bouwdenii* is light pink and is the most popular *Nerine* variety.

The German market prefers Extra grade of *Ornithogalum* and *Nerine*, but *Liatris* is imported in several grades (stem lengths).

The above assortment is used in bouquets mixed with other cut flowers and in flower arrangements. *Liatris* is a popular product for ready-made bouquets for the supermarkets, food stores etc.

### Production

*Liatris* and *Ornithogalum* are produced in open fields while *Nerine* is produced in greenhouses. In tropical regions the above species are successfully produced at altitudes of 1,200-1,800 m. *Nerine* may suffer from fungal diseases in areas with high humidity.

---

## Exotic Bulbs and Corms

---

### Harvesting

*Ornithogalum thyrsoides* is harvested when the first flowers show colour and start to open while *Ornithogalum arabicum* is harvested when the whole cluster shows the true colour. *Liatris* is harvested when the first flowers in the top of the spike start to open and *Nerine* is harvested when the first flowers have just started to open. If harvested too late the flowers will lose their market value, and if harvested prematurely they will not perform well. Harvesting should take place in the mornings.

### Grading and Bunching

After harvest, the flowers are transported to the grading facilities for grading and bunching. *Ornithogalum arabicum* should have a well developed and nicely shaped flower cluster on a strong and straight stem of 60 cm to qualify for Extra grade. *Ornithogalum thyrsoides* should have a straight and strong stem and flower spike and a total length of 35-40 cm to qualify for Extra grade.

*Ornithogalum* is bunched in units of ten stems to a bunch, secured with a rubber band and cut to the appropriate length. These are then bundled into units of five bunches to a bundle, secured with a rubber band and wrapped in a sheet of white paper.

*Liatris* are graded into the following grades:

Extra: 80-90 cm

Class 1: 70-80 cm

Class 2: 60-70 cm

Shorter grades are also being imported, depending on the importer's requirements. Grading criteria for all grades are straight and strong stems which are not too thick and are proportionate to the whole flower, and a well shaped with a regular flower spike without visible fungal damage.

*Nerine* should have a straight, strong stem of about 50 cm and are well developed, regular flower cluster to qualify for Extra grade.

*Liatris* and *Nerine* are bunched in the same way as *Ornithogalum*.

### Cold Storage

*Liatris* and *Ornithogalum* are stored at 3-4°C, while *Nerine* should be stored at 6-8°C (lower temperatures result in chilling injuries).

## Exotic Bulbs and Corms

The flowers should be exported as fresh as possible, especially *Liatris* and *Nerine*, and storage periods of more than 3-4 days are not recommended. If possible, refrigerated transport and cold storage facilities at airports should be used.

### Packaging

There are no standard boxes on the market for the export handling of the above species on the German market. The Dutch standard 'A' box (120 x 46 x 25 cm, volume/weight 23 kg) will hold the following quantities:

Nerine:	400-600 stems
Ornithogalum arabicum:	400-500 stems
Ornithogalum thyrsoides:	600-800 stems
Liatris:	400-500 stems

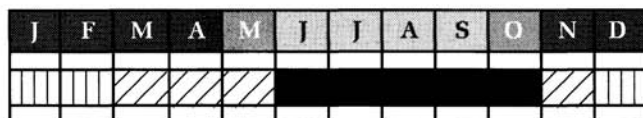
Export boxes should be strong and preferably of telescopic design.

### Supply

There are no specific statistics available for imports of the above assortment to Germany, and the domestic production of these products is considered to be very small. The major volumes of the above assortment are imported from the Netherlands, Israel, Kenya, Zimbabwe and Swaziland.

The supply pattern follows that for other cut flowers, with higher prices in the winter and lower prices in the summer.

The supply and demand pattern for exotic bulbs and corms is set out below:



### Import Legislation (See Appendices 1 and 2)

- A phytosanitary certificate is not required
- Quality standards apply, but the application is liberal

### Customs Tariffs (See Appendix 3)

Rates in percentage of the C&F value, tariff numbers 06031029 (1 June-31 October) and 06031069 (1 November-31 May):

## Exotic Bulbs and Corms

Period	Full	ACP countries	LDDC countries
1 June-31 October	20%	Free	Free
1 November-31 May	15%	Free	Free

### Prices

The highest prices are paid in December-March and the lowest prices in June-October.

Set out below are budget C&F prices for the main exotic bulbs and corms, in DM, based on VBA flower auction prices:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Year Av.
Liatris	0.15	0.25	0.24	0.44	0.35	0.26	0.23	0.27	0.28
Nerine	0.37	0.38	0.48	0.71	1.15	1.50	1.30	0.96	0.48
Ornithogalum									
- arabicum	0.35	0.47	0.45	0.48	0.51	0.51	0.50	0.47	0.45
- thyrsoïdes	0.19	0.21	0.20	0.27	0.29	0.22	0.25	0.24	0.19

### Successful Selling

Consistently high produce quality and regular shipments are essential in order to export these flowers successfully. It is very important to plan production jointly with the German importer, and to adjust to market requirements at all times.

## — Tropical Exotics - Anthurium Andreanum —



**Varieties:** Intensive breeding has resulted in a wide and rapidly changing assortment of anthuriums. In addition to the varieties mentioned below, there are many small volume varieties being imported into Germany. It may also be possible to find local leaf-anthuriums in the tropics which would suit the market. However, the wild, pink species has little market value.

Red: Scarlet Red, Avonette, Tropical, Scarlette, AvoClaudia

Orange: Favourite

Pink: Avoanneke, Hoenette

White: Cuba Acropolis

Bicoloured: Uranus, Gracia

### Market Preferences

Anthuriums are delicate flowers. The German market is very concerned about the packaging from overseas suppliers, with a clear preference for the Dutch packaging (see below), which ensures that the flowers arrive in perfect condition. The dense packing often practised by overseas exporters has made importers reluctant to commit themselves to their products.

The German market prefers straight, strong stems and small to medium flower sizes. The colour preferences are as follows:

Red and orange/red: 60%

Pink: 20%

White: 15%

Bicoloured: 5%

Anthurium is used both in bouquets, either mixed with other cut flowers or in singles with ornamental foliage, and in flower arrangements and floral decorations.



## — Tropical Exotics - Anthurium Andreanum —

### Production

Anthurium andreanum is produced under shade net in tropical humid areas. The planting material is imported mainly from the Netherlands but also from Mauritius or Hawaii. The plants stay productive for 4-6 years. The plants require a high organic content in the soil.

Anthuriums are very sensitive to nematodes and to root rot.

### Harvesting

Harvesting should take place when a minimum of half the spadex has developed its true colour and the stem immediately below the bract is strong and stiff. The flowers should be put in water containing a flower preservative immediately after harvest and transported to the grading facilities.

### Grading and Bunching

Anthuriums are graded according to the size of the bract and stem length. The following grades are those normally applied for Anthurium. A single variety will not produce all the sizes but will remain within about three sizes:

Bract size	Min. stem	No/box
15 cm and above	50 cm	8
13-15 cm	45 cm	12
11-13 cm	40 cm	16
9-11 cm	35 cm	11
8-9 cm	30 cm	15
7-8 cm	25 cm	18
6-7 cm	25 cm	21

Other grading criteria for anthurium are absolute freshness, characteristic shape, and freedom from pests, diseases and residues.

### Packing

Each stem is packed with a phial of water containing a flower preservative. The stems are taped to the bottom of the box to prevent them from touching each other, and protected with shredded soft paper or pieces of white foam. The spadex is often protected by plastic foam. Anthurium is very sensitive to low temperatures and extra protection may be required during the winter.

## — Tropical Exotics - Anthurium Andreanum —

The boxes used in the Netherlands are available in three sizes, 100 x 20 x 10 cm, 100 x 40 x 12 cm and 110 x 40 x 14.5 cm. They are made of good quality cardboard and are telescopic. Cartons should be handled carefully so as to avoid bruising or damage by low temperatures.

### Cold Storage

Anthuriums are very sensitive to low temperatures and chilling injuries occur even at 11-13°C. It is recommended that they are handled in air-conditioned temperatures of about 20-22°C, and exported as fresh as possible at all times. Anthuriums have a long vase life of up to 3-4 weeks.

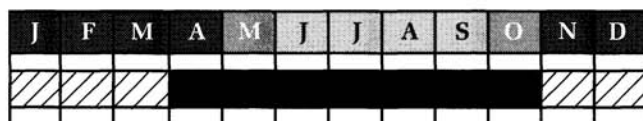
### Flower Preservatives

It is recommended that a flower preservative, e.g. Chrysal, is used in all water handling of anthurium.

### Supply

There are no specific statistics available for imports of anthurium to the German market, but the product is considered to be comparatively small, mainly due to distribution problems but also to the price. Imports take place all year round from the Netherlands but seasonally from overseas imports. The market demand is seasonal with a good market in the period November-April and a slack season in the summer. The major exporting countries are the Netherlands, Jamaica, Hawaii, Mauritius and the Ivory Coast. Overseas suppliers can prolong their season and increase their quantity if they use appropriate packing and offer an attractive assortment.

The supply and demand pattern for imported anthuriums is set out below:



### Import Legislation (See Appendices 1 and 2)

- A phytosanitary certificate is not required
- Quality standards apply, but the application is liberal

## — Tropical Exotics - Anthurium Andreanum —

### Customs Tariffs (See Appendix 3)

Rates in percentage of the C&F value, tariff numbers 06031029 (1 June-31 October) and 06031069 (1 November-31 May):

Period	Full	ACP countries	LDDC countries
1 June-31 October	20%	Free	Free
1 November-31 May	15%	Free	Free

### Prices

Anthuriums imported direct from overseas exporters only obtain about half the price of Dutch produce on the German market. The main reasons for this are a limited assortment and poor packaging. If these problems were overcome an overseas exporter could acquire an all year round export market and a good price. Set out below are budget C&F prices for the main Stem Lily varieties, in DM, based on VBA flower auction prices:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Year Av.
High Average	1.80	2.40	3.00	2.60	2.70	2.50	2.35	1.50	1.80
Low Average	1.60	2.10	2.65	2.30	2.40	2.20	2.10	1.30	1.60

Variety can influence prices by about 30% from the average.

### Successful Selling

In order to export anthuriums competitively to the German market low air-cargo rates are essential. The exporter will have to offer an attractive assortment in packaging which guarantees the safe arrival of the produce. It would be an advantage to adopt the Dutch packing system, since this is well known by the market.

## **—— Tropical Exotics - Heliconia Species ——**



**Assortment:** Heliconia: This genus is large with hundreds of hybrids, both natural and bred. The most well known species are:

Heliconia pendula  
Heliconia caribaea  
Heliconia psittacorum

Other species in the tropical exotic assortment are:

Strelitzia (Bird of Paradise)  
Alpinia purpurata (Torch lily)

Further species from this assortment imported into Germany in small volumes include Baby-banana flowers, Pineapple flowers, Bromeliad flowers, Porcelain roses and others. This range is expected to increase in the future. Most species in this assortment have rather strong colours.

### **Market Preferences**

Most of the above species are comparatively expensive in the German flower shops, since they are often heavy, difficult to handle, and frequently have a very limited vase-life due to inappropriate handling. The market prefers hybrids with a comparatively long vase-life which are available throughout the import season. Good packaging is needed to reduce the risk of transport damage. The stems should be a minimum of 60 cm for the short species and 90 cm for the longer ones. The leaves should be enclosed in the carton. The pink variety of Alpinia is more popular than the red variety.

The above assortment is mainly used in exclusive bouquets and flower arrangements

### **Production**

The above assortment consists of perennial species which remain productive for several years. Replanting takes place when the plants

## **———— Tropical Exotics - Heliconia Species ————**

become too dense. They are grown in open field conditions in a tropical humid climate.

Several hybrids of Heliconias may have an identical appearance but very different vase-life, cropping season and handling delicacy. It is important to select an assortment of hybrids for commercial production which have similar appearance, vase-life and handling properties but which have different cropping seasons. This may enable the exporter to supply flowers of the same colours throughout the season.

### **Harvesting**

The flowers are harvested in the morning and should be transported to the grading facilities immediately after harvest and put in water. It is important to be extremely careful during all manual handling of the flowers since the slightest pressure on certain varieties will result in brown marks. The flowers are harvested when the bracts are well developed and are showing their true colour but before the flowers are visible. Some species, such as *Strelitzia*, should be harvested when the bract has opened and the first flower is well developed.

### **Grading and Bunching**

There are no set standards for grading and bunching. In general all species are graded to a stem length correlated to the species, which may vary from 60 cm for *Heliconia psittacorum* up to 1.80 m for the largest Heliconias. The most common stem lengths are between 90 and 110 cm, but each importer may have individual requirements. Each species is exported in one grade only. The flowers should be free of diseases, mechanical damage and residues and at the correct stage of maturity.

### **Packaging**

There are no set standards for packaging and exporters use different methods, but the following details are of importance:

- Each flower needs protection from mechanical damage, either with plastic foam, soft paper, shredded paper or similar.
- Each stem should be secured in the box with tape or string and packed, usually in a single layer, with shredded paper in between the flowers.
- *Heliconia psittacorum* and *Strelitzia* are bunched in units of 10 and 5 stems to a bunch respectively and secured with a rubber band. The bunches are packed into the box with a pillow made of foam or rolled newspaper in the middle.

## **———— Tropical Exotics - Heliconia Species ————**

- When the box is fully packed, the stems are secured with a foam coated wooden stick which is nailed through the sides of the box.

Boxes should be made from strong cardboard and be telescopic for extra strength. The following sizes are common for imports of Heliconia to Germany: 155 x 48 x 28 (or 14) cm, 135 x 35 x 12 cm, 110 x 48 x 12 cm and 110 x 24 x 28 (or 12) cm. The above boxes hold, depending on the species, size, etc. about 15-45 large Heliconia, 30-60 small Heliconia and about 200-300 Heliconia psittacorum, which are packed into the smaller boxes.

Cartons commonly used for Strelitzia have the following measurements: 120 x 30 x 12.5 cm which holds about 35-40 stems, and 120 x 30 x 30 cm which holds about 100-150 stems.

Cartons commonly used for Alpinium measure 105 x 50 x 17 cm and 115 x 40 x 35 cm and hold between 100 and 150 flowers. The exporter may use the same boxes as he uses for Heliconia if he is also exporting those.

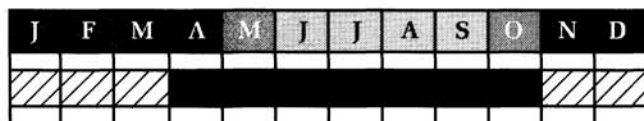
It is common to export mixed boxes, especially of Heliconia. Since these species are not major volume items on the German market it is recommended that packing units remain small.

### **Supply**

There are no specific statistics on the imports of the above assortment to Germany and total volumes are very difficult to estimate. However, the assortment has become quite important to German flower shops for special flower arrangements and bouquets. The main supplies of Heliconias and Alpinium are imported from Costa Rica, Jamaica, Barbados, Hawaii and the Ivory Coast. Strelitzia is imported mainly from Italy, France and Spain, but minor volumes are coming from overseas exporters.

The major market opportunities are during the period November-April, and the market is very limited outside this. The assortment will probably never become a large volume product because of the comparatively high prices.

The supply and demand pattern for imported Heliconia is set out below:



## **—— Tropical Exotics - Heliconia Species ——**

### **Import Legislation (See Appendices 1 and 2)**

- A phytosanitary certificate is not required
- Quality standards apply, but the application is liberal

### **Customs Tariffs (See Appendix 3)**

Rates in percentage of the C&F value, tariff numbers 06031029 (1 June-31 October) and 06031069 (1 November-31 May):

<b>Period</b>	<b>Full</b>	<b>ACP countries</b>	<b>LDDC countries</b>
1 June-31 October	20%	Free	Free
1 November-31 May	15%	Free	Free

### **Prices**

The following DM C&F prices, including import duty, were reported on the German market in the 1991-1992 season:

<b>Variety</b>	<b>Price in DM</b>
Heliconia pendula	3.65
Heliconia caribea	3.30
Heliconia psittacorum	1.25
Alpinia pupurea	2.30
Strelitzia	1.70-2.10

### **Successful Selling**

The key to successful exports of the above assortment is careful handling, a good packaging system and an appropriate assortment in suitable packing units. It is also important to ensure good selection of planting material and hybrids so as to be able to export an assortment of similarly coloured and shaped flowers throughout the export season.

---

## Tropical Exotics - Orchids

---



**Assortment:** The major species in the tropical orchid assortment is *Dendrobium*. As a result of intensive breeding many new cultivars are available. The new hybrids have longer stems, larger flowers and less seasonal cropping periods. New varieties which will be introduced to the market are expected to increase the popularity of *Dendrobiums* in Germany.

*Dendrobium*: Madame Pompadour, White Caesar, Taj Swee Keng, Tokyo, Anita, Bom, Venus, Parisienne, Diamond Pink etc.

Aranda: Norah Alsagoff, Christina no 1, 5, 27, 80, 130

Arachnis: Maggie Oei

Oncidium: Golden Showers, Giant

Aranthera: James Storei, Anne Black

Wanda: Rotschildiana

### Market Preferences

The market was over-supplied with the variety Madame Pompadour from Thailand in the 1970s which resulted in low prices and depressed demand. In the 1980s more exclusive *Dendrobium* varieties were introduced to the market and these have become very popular. The assortment of the other species of tropical orchids has remained unchanged. *Dendrobium* is the most popular tropical orchid especially varieties with big, soft pink or cream flowers.

Tropical orchids are mainly used in bouquets or sold as single flowers in combination with decorative foliage. Sometimes they are combined with one or two other cut flowers, often with a characteristic design. They are also used in flower arrangements. A major market is the ready made bouquets of short *Dendrobiums* sold in supermarkets and food stores.



---

## **Tropical Exotics - Orchids**

---

### **Production**

Dendrobium, Wanda and Oncidium are grown under shade net and in hanging pots filled with charcoal. The other species are grown in open field conditions in soil enriched with coconut husk. Plant material can be purchased in Thailand, Singapore, Malaysia, the UK, the Netherlands and Australia. The pot grown varieties are usually purchased as tissue culture plants, whereas the other species are often purchased as tip cuttings. The exporter should be very careful to avoid purchasing diseased plant material.

### **Harvesting**

Harvesting should take place in the mornings when about half the flowers on the spike are open. If too many flowers are open the lower flowers will wilt too quickly. The flowers are put in water after harvest and transported to the grading facilities.

### **Grading and Bunching**

Dendrobiums are sorted into three grades: large, medium and short.

The short grade are often sold as bouquets comprising 2-3 Dendrobiums combined with a fern leaf in a plastic sleeve.

The large grade should have a well shaped spike, a strong stem which can support the flowers and a stem length of 50-60 cm. Medium grade should be of the same quality but have a stem length of 40-50 cm.

There are no set quality standards for the other species and they vary significantly in size depending on the species. In general, they are traded in two grades, large and medium.

The quality criteria for all species are a well shaped spike, strong stems which can support the flowers, absolute freshness and the absence of any residues and diseases.

The flowers are bunched in units of five stems to a bunch, apart from Rotschildiana which is packed as singles. The bunch is cut to the appropriate length and secured with a piece of plastic film which contains a piece of cotton drenched in water. A rubber band is placed around the base of the bunch. The bunch is placed in a plastic sleeve before packing.

### **Cold Storage**

Tropical orchids are very sensitive to low temperatures. It is recommended that the flowers are handled in an air-conditioned atmosphere with a

## Tropical Exotics - Orchids

temperature of around 20-22°C.

### Packaging

There are no set standards for the boxes used for importing tropical orchids to Germany. Thai exporters often use the following system:

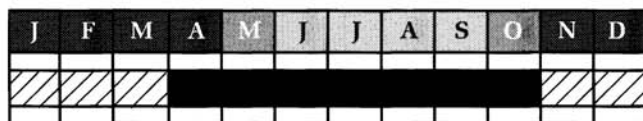
- Box size: 102.5 x 40 x 7.5 cm, with four boxes per master box.
- Box size: 82.5 x 37.5 x 7.5 cm, with four boxes per master box.

About 15-20 bunches are packed in each box depending on the box type and the species/grade. Cartons may be exported containing an assortment of grades and varieties or with one grade and one variety in the box. This should be agreed with the importer in Germany. The flowers are packed sufficiently close together to avoid any damage during transport, but not too densely. Tropical orchids are less fragile than temperate orchids.

### Supply

The major exporters of tropical orchids into the German market are Thailand, Singapore, Malaysia and some re-exported Dendrobiums from the Netherlands. Tropical orchids are imported all the year with the major market opportunities from November to April. The peak cropping season for Dendrobiums in Thailand is the summer. Large volumes are exported to Germany at low prices during the slack summer season. Total imports to Germany of tropical orchids stands at about 15 million stems per year, which is about the same volume as in 1985. The new varieties of Dendrobium are expected to increase consumption in the future.

The supply and demand pattern for imported tropical orchids is set out below:



### Import Legislation (See Appendices 1 and 2)

- A phytosanitary certificate is not required
- Cites licence is required
- Quality standards apply, but the application is liberal

## **Tropical Exotics - Orchids**

### **Customs Tariffs (See Appendix 3)**

Rates in percentage of the C&F value, tariff numbers 06031015 (1 June-31 October) and 06031055 (1 November-31 May):

<b>Period</b>	<b>Full</b>	<b>GSP countries</b>	<b>ACP countries</b>	<b>LDDC countries</b>
1 June-31 May	20%	15%	Free	Free
1 November-31 May	15%	15%	Free	Free

### **Prices**

Prices fluctuate significantly between seasons and are mainly influenced by the supply situation in Thailand and the market in Japan. The price also varies significantly between the different varieties and grades. The flower auctions in the Netherlands only sell small quantities of these products and, therefore, these prices can not be used as comparative prices. The C&F price recorded in Germany for shipping wholesalers in 1991-92, inclusive of import duty, was DM 0.28-0.50, depending on the grade and the variety.

### **Successful Selling**

**An attractive assortment of Dendrobiums of excellent quality is probably the most important asset to ensure successful exports of tropical orchids to the German market. The exporter should also, if possible, have access to competitive air-cargo rates. Tropical orchids are imported both by shipping wholesalers and distributing wholesalers.**

## **Tropical Exotics - Protea Species**



**Assortment:** The protea assortment usually includes some other species:

Protea cynaroides (King Protea)  
Protea magnifica (Queen Protea)  
Protea neriifolia (Minks)  
Protea eximia  
Protea obtusifolia  
Banksia prionotes  
Leucospermum cordifolia  
Leucandendron discolor (Red  
Sunset a.o.)

These represent wild species and hybrids originating from the sub-tropical areas in the Southern Hemisphere.

### **Market Preferences**

These products are not large volume sellers on the German market, but they have an established market position. The large Protea varieties are sold packed separately in boxes, but the other varieties are often marketed in mixed boxes. The most popular varieties have rather soft luminous colours, which are preferred to sharp colours. The flowers should appear fresh. Protea cynaroides and Protea magnifica are the most well known species on the German market.

### **Production**

The above assortment grows as perennial bushes in the sub-tropical areas of the Southern Hemisphere, and has been planted in the highlands (about 1600 m altitude) in tropical countries.

### **Harvesting**

The flowers are harvested when the bracts are fully extended and semi-opened. After harvest, the flowers are brought to the grading area and put in water.

## **———— Tropical Exotics - Protea Species ————**

### **Grading and Bunching**

Flowers are graded into one quality only (Extra grade), and all produce with malformed bracts, damage, over-mature flowers, bent stems, leaf discolouration etc is rejected. Stem lengths vary with the species, from 15 cm to 70 cm.

The large Proteas and Banksia are packed as singles, but the other species are bunched in units of five stems to a bunch and secured with a rubber band. All species are wrapped in soft, white paper.

### **Cold Storage**

This assortment should be handled and transported in a controlled temperature of 8-10°C. Products should be exported as fresh as possible.

### **Packaging**

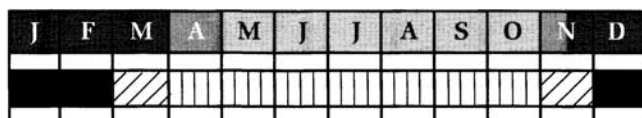
Strong, telescopic cardboard boxes are used. The flowers are packed in small units e.g. the Dutch air-box 12 (106 x 35 x 20 cm, volume/weight 12kg) or the box 15 (106 x 35 x 24 cm, volume/weight 15kg).

### **Supply**

The major volumes are imported to Germany from South Africa, Zimbabwe, Israel, Australia and New Zealand. There are no statistics available for the total volume imported.

Due to the short cropping period, the major supply season is December to January although for some species it continues through February into March. However, a limited assortment could be made available in small quantities throughout the year, from various parts of the world. Leucandendron is available throughout the year.

The supply and demand pattern for Proteas is set out below:



## **Tropical Exotics - Protea Species**

### **Import Legislation (See Appendices 1 and 2)**

- A phytosanitary certificate is not required
- Quality standards apply, but the application is liberal.

### **Customs Tariffs (See Appendix 3)**

Rates in percentage of the C&F value, tariff numbers 06031029 (1 June-31 October) and 06031069 (1 November-31 May):

<b>Period</b>	<b>Full</b>	<b>ACP countries</b>	<b>LDDC countries</b>
1 June-31 October	20%	Free	Free
1 November-31 May	15%	Free	Free

### **Prices**

There are very small seasonal price variations for this assortment, especially for the heavy products, mainly because of the high freight costs. Many species are only available during the high price season. However, price differences between the various species are significant.

### **Successful Selling**

**Consumption of these products in the German market could probably be increased substantially if they were professionally promoted. Research is also required to resolve post-harvest handling problems and improve produce quality.**

**At present the key to successful exports into the German market is regular shipments of good quality, fresh produce in an attractive assortment. These products are being imported both by shipping wholesalers and distributing wholesalers.**

## —— Tropical Exotics - Ornamental Foliage ——



**Assortment:** There is a very wide assortment of tropical ornamental foliage which is being imported into Germany. The assortment can be divided into two groups:

Large volume species:

Leatherfern  
Chamaedorea  
Bear Grass

Small volume species:

Fishtail palm  
Philodendron (several varieties)  
Anthurium  
Monstera  
Alpinia  
Heliconia  
Banana  
Calathea, several varieties  
Washingtonia  
Livistonia  
Chrysalidocarpus  
Cycas  
Dracaena, several varieties  
Pittosporum  
Podocarpus  
Asparagus, several varieties  
Croton, several varieties  
Coconut clusters  
Dieffenbachia  
Tree fern  
Papyrus

The assortment is likely to expand as several new varieties are being tested on the market.

### **Market Preferences**

The dominant product in the above assortment is Leatherfern, followed by the Bear Grass and Chamaedorea. Most of the small volume products are quite new on the market and this assortment has developed rapidly during the last decade.

## **—— Tropical Exotics - Ornamental Foliage ——**

Leatherfern is very popular as a standard product, but the small volume products have become especially popular with specialist flower shops, since they enable the florist to create a much greater variety of arrangements and bouquets. The small volume products are often sold in mixed bunches, which provide the florist with a wide assortment without the commitment of purchasing large volumes. Both the range of products and demand for the small volume products are expected to increase.

Ornamental foliage is used together with various cut flowers in bouquets and in all kinds of flower arrangements and floral decorations.

### **Production**

Ornamental foliage is produced both under shade net and in natural shade, depending on the species. Some species are also harvested from the wild. Species like Leatherfern are produced at high altitudes in tropical areas (1,000-1,500 m), and some are produced in the humid tropical climate of the lowlands. The life-span of planted motherplants depends on the species and their maintenance, but most will stay productive for 3-4 years or more.

The quality of the leaves and the production is controlled by harvesting methods. A plant which is harvested too hard will produce smaller leaves and may change colour pattern whereas plants which are harvested less frequently will produce bigger leaves. The grower must know the market preferences for each species in order to harvest correctly. There is no specific cropping season, apart from that which may be caused by climatic changes.

### **Harvesting**

Leaves are harvested when fully developed for optimum vase-life.

### **Grading and Bunching**

There are no set standards for grading and bunching.

Leatherfern is usually graded in three sizes, large, medium and small, of which large and medium are the major items on the German market. Leatherfern is, in general, bunched in units of 20 leaves to a bunch.

With other species even sizes should be graded into similar sizes.

They are normally bunched into units of five or ten depending on the size of the leaf. The leaves are secured with a rubber band.



## — Tropical Exotics - Ornamental Foliage —

It is common to bunch the small volume products in assorted bunches of 10-30 leaves per unit, which are packed into plastic bags. This system of packing will probably become more popular in the future.

### Packaging

There are no set standards box sizes for ornamental foliage. The box most commonly used for Leatherfern measures 73 x 54 x 25 cm and holds 700 large of 45-50 cm, 800 medium of 40-45 cm and 1,000 short of 30-35 cm. For other ornamental foliage, it is recommended that packing is agreed with the importer.

### Cold Storage

It is necessary to handle Leatherfern in low temperatures and it may be stored for 3-4 weeks at 2-3°C. The other varieties are usually handled in an air-conditioned environment and exported as fresh as possible.

Leatherfern is mainly transported in reefer containers by boat. The other varieties are transported by air.

### Supply

Imports of tropical ornamental foliage into Germany have increased and the total imports in 1990 reached 12,000 tons, up 20% from 1989. The increase due to exports from developing tropical countries. The major suppliers are the USA (Florida), Costa Rica, Guatemala, the West Indies, Ivory Coast, South Africa and Togo.

The demand follows that of cut flowers closely since these products are sold together. The market is good in October until May and slack in the summer. However, ornamental foliage is being imported into Germany on a year round schedule. Competing products are ornamental foliage produced in temperate and sub-tropical areas, such as ruscus, eucalyptus, euonymus etc. and this competition is heavy in January to March.

The supply and demand pattern for imported tropical foliage is set out below:

J	F	M	A	M	J	J	A	S	O	N	D

## **—— Tropical Exotics - Ornamental Foliage ——**

### **Import Legislation (See Appendices 1 and 2)**

- A phytosanitary certificate is not required
- Quality standards apply, but the application is liberal

### **Customs Tariffs (See Appendix 3)**

Rates in percentage of the C&F value, customs tariff number 06039000:

<b>Period</b>	<b>Full</b>	<b>ACP countries</b>	<b>LDDC countries</b>
The whole year	15%	Free	Free

### **Prices**

Prices fluctuate with the season to a certain extent but less for these products than for most cut flowers. Prices are usually agreed for 2-4 months. There is no clear market price as such for the majority of these products but this is expected to develop in the future. Leatherfern is a well-defined product for which there are prices. These vary with the country of origin, the quality and the grade. An average C&F price should be DM 2.25 - 3.60 per bunch.

### **Successful Selling**

The key to successful exports of ornamental foliage into the German market is regular shipments of a good quality, attractive assortment with competitive air cargo rates. Exporters usually produce only the volume products or a section of the small volume assortment. In very few cases are all the products supplied by the same exporter. It is essential to work closely with market contacts when developing the assortment and to adjust to market requirements.

The large volume products are, in general, imported by shipping wholesalers, and the small volume products by both shipping wholesalers and distributing wholesalers.